NASA EARTH SCIENCE ENTERPRISE

Outreach and Communications Plan

Getting the word out that NASA does Earth Science to understand and protect our home planet

April 2004

To the Earth Science Enterprise Team:

We continue to evolve the NASA Earth Science Enterprise in light of new scientific understanding, advances in technology, and emerging national priorities. The NASA sponsored research and unique Earth observations are designed to answer questions at the frontiers of science and societal concern. We provide Earth science data and information products to millions of users each year in universities, industries, and Federal, state, local, and tribal government agencies to help them explore our home planet and improve the essential services they perform for the nation. Among these critical services are weather forecasting, seasonal climate prediction, climate change assessments, transportation safety, natural resources management, new agricultural practices, and infrastructure planning.

Earth science is science in service to society. NASA is pleased to play a leadership role in understanding and protecting our home planet. We must continually strive to inform broader audiences not only of *what* we are accomplishing and learning, but also *why* we are doing so and how it is relevant to them. Further, NASA's mission is to use the agency's research results and observing capabilities "to inspire the next generation of explorers." NASA's goal is to "engage the public in shaping and sharing the experience of exploration and discovery." Finally, we have an obligation to inform the public of the return it receives from its investment in NASA.

We must all take the next steps together to communicate our message and accomplishments to broader audiences. This Outreach and Communications Plan provides a framework for the NASA team and our partners to effectively carry forth NASA's Earth Science Enterprise message and service to the Nation. The Plan was developed with input from the diverse set of research, applications, technology, flight mission, and education program managers across the Enterprise with the intent of bringing the creative outreach efforts of all these programs into alignment with a common strategy. Together we can effectively get the word out that NASA does Earth Science to understand and protect our home planet.

Ghassem R. Asrar
Associate Administrator for Earth Science

Outreach and Communications Plan for the Earth Science Enterprise

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Executive Summary

The first elements of NASA's Vision and Mission are "to improve life here" and "to understand and protect our home planet", respectively. The Earth Science Enterprise (ESE) works toward the goal of advancing our capability to understand how and why the Earth is changing, and what are the consequences for life. Our unique ability to improve on knowledge of the Earth system and its predictability potentially benefits every inhabitant of Earth. A thorough ESE Outreach and Communications Plan is required to inform broader audiences not only of *what* we are accomplishing and learning, but also *why* we are doing so and how it is a key contribution to the Nation's effort to protect and understand our home planet. A documented plan is required to establish a common approach to communications and outreach for the Enterprise: including each of our valued domestic and international partners, the nation and the global community that benefit from the NASA research and development in aerospace science and technology.

The plan presents the new approach to organizing and managing the network of agents committed to effectively communicate a unified Enterprise message that is consistent with Agency and national objectives. Section One provides the purpose and scope of the Enterprise's Outreach mandate within the context of the Agency and national outreach agenda. Section Two lays out the goal, objectives and approaches of the plan. This section identifies the key target audiences of the Outreach effort, the management approach, and investment strategies. Section Three provides a roadmap for implementing the Outreach and Communications Plan by introducing planning and parameters for metrics, identifying Center and network agent roles, and providing guidance that is critical to NASA divisions and cross-cutting activities within the Enterprise. This section outlines an Outreach Product Development and Review Process. Appendix A provides the motivation and background for the One NASA vision. Appendix B offers a synopsis of current Enterprise Outreach component and a sampling of effective Outreach measures. Appendix C lists the guidelines for printed material for the Enterprise. Appendix D provides a sample Outreach Product Authorization form.

This document is a pioneering statement of the Enterprise and Agency commitment to inform broader audiences not only of *what* we are accomplishing and learning (the results), but also *why* we are doing so and how it is relevant to them.

I. Purpose and Scope

The NASA Vision is

To improve life here
To extend life to there
To find life beyond

The NASA Mission is

To understand and protect our home planet
To explore the universe and search for life
To inspire the next generation of explorers
…as only NASA can

In 1958, Congress passed the Space Act mandating NASA to broadly disseminate the knowledge it generates. Further, NASA's mission is to use the agency's research results and observing capabilities "to inspire the next generation of explorers." NASA seeks to "engage the public in shaping and sharing the experience of exploration and discovery." Table 1 provides an overview of NASA's strategic goals and objectives for communicating our message to the broader target audiences. The E-Government Act of 2003 encourages and empowers Federal agencies to use advanced technology as an integral component of Outreach strategy, in order to make government research more "citizen-centric." Finally, we have an obligation to inform the public of the return it receives from its investment in NASA.

A thorough Outreach and Communications Plan is required to inform broader audiences not only of *what* we are accomplishing and learning, but also *why* we are doing so and how it is relevant to them. This document lays out a top-level Outreach and Communications Plan ('the Plan') for the Enterprise. NASA's Earth Science Enterprise provides overall leadership and guidance for the strategy and a coordinated network of ESE staff, Enterprise-affiliated field centers and their staff, and partner institutions and their staff that contribute to NASA in implementing our plan. The plan is aligned with the strategic objectives and goals of Table 1 and leverages the unique scientific and educational contributions provided by the Earth Science Enterprise.

Table 1. NASA Public Outreach Strategic Goals (as derived from the NASA Strategic Plan)

NASA Strategic Goals and Objectives
Goal 7. -- Engage the public in shaping and sharing the experience of exploration and discovery
Objective 7.1 --Improve the capacity of science centers, museums, and other institutions, through the development of partnerships, to translate and deliver engaging NASA content.
Objective 7.2 --Improve science Literacy by engaging the public in NASA missions and discoveries, and their benefits, through such avenues as public programming, community outreach, mass media, and the Internet.
Objective 7.3 --Increase public awareness and understanding of how research and innovations in aerospace technology affect and improve the quality of life.

II. Goal, Objectives and Approaches

Building An Effective Outreach Plan

An effective Outreach and Communications Plan must transcend beyond the traditional approach of reporting new mission launches and exciting new images from a spacecraft. The Plan must be far more than the distribution of fountain pens, lapel pins, posters, and non-targeted brochures. The Plan must:

- Establish a common message for the approximately 14,000 personnel associated with the Earth Science Enterprise (NASA civil servants (3000), contractors (8000), partners (3000));
- Continuously update evolving Enterprise plans and dynamic results;
- Make decision-makers and opinion-shapers cognizant of the value, types, and sources of ESE information;
- Empower our internal and external communications intermediaries;
- Provide a coherent framework for the ESE Outreach network to work in;
- Implement efficient use of existing resources;
- Promote Earth Science literacy in the public;
- Convey the value of ESE education programs for the "next generation of explorers" ; and
- Evaluate the effectiveness of products and activities resulting from NASA research and development of aerospace science and technology for Earth System Science.

This plan defines mechanisms to communicate the status, progress, and achievements of the Enterprise to stakeholders, intermediary organizations, and public that consume Earth science

data and those that currently have limited awareness of NASA's contributions to Earth science. A public that understands the Enterprise's contributions is likely to appreciate how the nation's space agency positively affects their daily lives. Furthermore, the plan seeks to operate within the new NASA paradigms that (1) all investments contribute to a single set of Agency goals and (2) all activities convey One NASA and "as only NASA can." (see Appendix A)

Goal

In keeping with NASA and Federal strategic goals, the Earth Science Enterprise's Outreach goal is to provide current and accurate information for access by policymakers and opinion-makers, the public at large and the users of Earth science data that enable contributions to protect and understand Earth.

Objectives

- To communicate our progress, the value and relevance of our results, and our future plans to decision makers and opinion shapers; and
- To increase public awareness of NASA's key role in Earth science and engage them in our missions, discoveries, and applications of our research and development results;
- To improve the capacity of other communicators of Earth science to deliver engaging NASA content.

Approach

The Outreach and Communications Plan will shift the paradigm from uncoordinated, multiple-message efforts to a strategically targeted approach leveraging a coordinated network of agents. The Plan:

- Maps easily and intuitively to Program, Enterprise, Agency and Federal strategies;
- Clearly identifies target audiences with specific messages tailored to each group;
- Opens and maintains pathways of communication with key decision-makers and opinion-shapers;
- Guides the development of information products that accurately and clearly communicate the NASA's Earth science results;
- Engages our science and applications community;
- Uses the internet, publications, Public Affairs Office, Legislative Affairs Office, External Affairs Office, Center Visitors Centers, etc;
- Leverages our resources by creating partnerships with appropriate outside groups and organizations;
- Provides Earth observation opportunities for the general public by building a communications network where sustained and engaging activities are provided; and
- Measures and evaluates all activities.

The ESE Outreach network should use these Enterprise criteria as benchmarks when producing Outreach products and services.

Target Audiences

The Outreach audiences can be grouped into three broad categories: Stakeholder Communication, Peer Communication, and Public Communication (Figure 1). Though not identical, the Enterprise's terms are consistent with the *President's Management Agenda*'s definitions of target audiences as "government to citizen," "government to government," and "government to business." Target groups (figure 1) are defined as follows:

- **Public Communication**

  Public Communication is defined as communicating with the public (science attentive, informed, and general). This component is highly synergistic with "informal education" but specifically targets the "broader public community." Examples include press releases, NASA & ESE homepage, media coverage of ESE activities, science museum exhibits, and community events. ESE's Education Program Strategy and the Education Enterprise maintain formal responsibilities for informal education, but many ESE outreach activities will overlap with informal education audiences. The ESE Education Strategy, *Inspire the Next Generation of Earth Explorers*, and the Education Enterprise Strategy, *See Learning in a Whole New Light*, document the ESE and Agency education goals.

  The public has access to numerous conduits of information including newspapers, magazines, television, radio, and various reports. As officially noted by Congress in the E-Government Act, recent studies indicate that a growing number of people rely on the Internet for information acquisition, particularly for Earth science-related issues. As Earth science information often addresses topics of interest and relevance beyond the NASA internal community, the Outreach and Communication Plan will effectively leverage all available media platforms to communicate with the public. As such, our plan requires a strong relationship with NASA's Public Affairs and congressional interface activities.

- **Stakeholder Communication**

  Stakeholder Communication is defined as communicating with decision-makers and opinion-shapers and establishing resources to enable efficient and effective assessment of the value of NASA's Earth Science results and to set the direction for future Earth science programs. State, local, and federal policymakers (and some internal Agency decision-makers) would be included in this "community of decision-making".

  A key component of this plan is to reach strategic stakeholders - those who are asked to make decisions or inform decision-makers based on NASA research results in Earth Science. The stakeholder community, including policymakers and opinion-shapers at all levels, are often very active consumers of science information. As the scope of NASA's Earth science and policy agendas expand, the challenge increases to provide decision makers and others with up-to-the minute scientific and technical information that could affect critical policy issues. This group represents the interest of the broader public. Key

sources of policy information include major science literature (e.g. Nature and Science magazines) and the Internet. We need to maximize the dissemination of information through these venues and other effective mechanisms.

- **Peer Communication**

Peer Communication is defined as communicating with internal and external intermediary groups that work to create a product or service for the stakeholders or public. Examples include other Federal agencies, interagency and international committees, NASA internal institutions, university researchers, the private sector, media and non-governmental organizations (e.g., law offices, businesses, civic groups). This group can be effectively considered a "community of practice".

Our Outreach plan involves sharing Earth science results with key audiences that are themselves "intermediary" users or members of the community-of-practice associated with Earth science information. This group includes international partners, federal agencies, non-Enterprise NASA institutions, media, associations, or private-sector companies that utilize NASA's Earth science information. These groups are important conduits for Earth science information and it is our responsibility to ensure that ESE's message is current and consistent. In the broader context of this "community of practice," we are an integral part of domestic programs in Climate Change Science and Technology, OceanUS, Geospatial One Stop, US Weather Research Program, and Earthscope. NASA is also a key participant in international groups including the Global Climate Observing System (GCOS), Global Terrestrial Observing System (GTOS), Global Ocean Observing System (GOOS), Integrated Global Observing Strategy (IGOS), and Committee on Earth Observation Satellites (CEOS). NASA supports a number of United Nations programs including the World Meteorological Organization (WMO) and World Summit on Sustainable Development (WSSD). As such, our Outreach efforts must be consistent with and scalable to these efforts.

Message

What NASA Does

We use our vantage from space to understand and protect our home planet.

Why NASA Does Earth Science (e.g. "So what?")

- Planet Earth is a complex, dynamic system for which many unknowns remain. The Earth system, like the human body, comprises diverse components that interact in complex ways, requiring unique capabilities for characterizing, understanding and predicting change. NASA's view of the whole planet from space enabled us to pioneer the study of Earth system science.
- Earth is the only planet in our solar system known to be capable of sustaining life. NASA's research on the Earth system tells us why.
- Over the past 50 years, world population has doubled, while grain yields have tripled and economic output has grown sevenfold. Earth system science can ascertain whether and how the Earth can sustain this growth in the future.
- Over a third of the US economy--$3 trillion annually—is influenced by climate, weather, and natural hazards. NASA creates technology and knowledge others in government, industry, and the public use to enhance economic security and environmental stewardship.
- The leaders and citizens who will meet challenges of tomorrow are in school today. Earth system science is strengthening science, technology, engineering and mathematics education nationwide.
- In an increasingly interconnected world, human activities cause global change, and global changes affect us all. NASA's Earth Science Enterprise conducts research and technology development to answer the question "How is the Earth system changing, and what are the consequences for life on Earth?"

How NASA Does Earth Science (e.g. What does NASA uniquely contribute?)

Our mission: *To understand and protect our home planet by using our view from space to study the Earth system and improve prediction of changes in the Earth system*.

- We give the world new and powerful means to observe Earth as a system.
- We conduct and sponsor research to answer fundamental science questions about the changes we see in climate, weather and natural hazards on planet Earth.
- We extend the use of new technology and knowledge about the Earth system to serve society through partnerships with other Federal agencies, industry, and other nations.
- We deliver sound science to help decision-makers make knowledgeable decisions.
- We provide knowledge of how and why life is sustained on Earth to help scientists explore the universe and search for life elsewhere.
- We inspire the next generation of Earth explorers by providing opportunities for learners of all ages to investigate the Earth system using unique NASA resources.

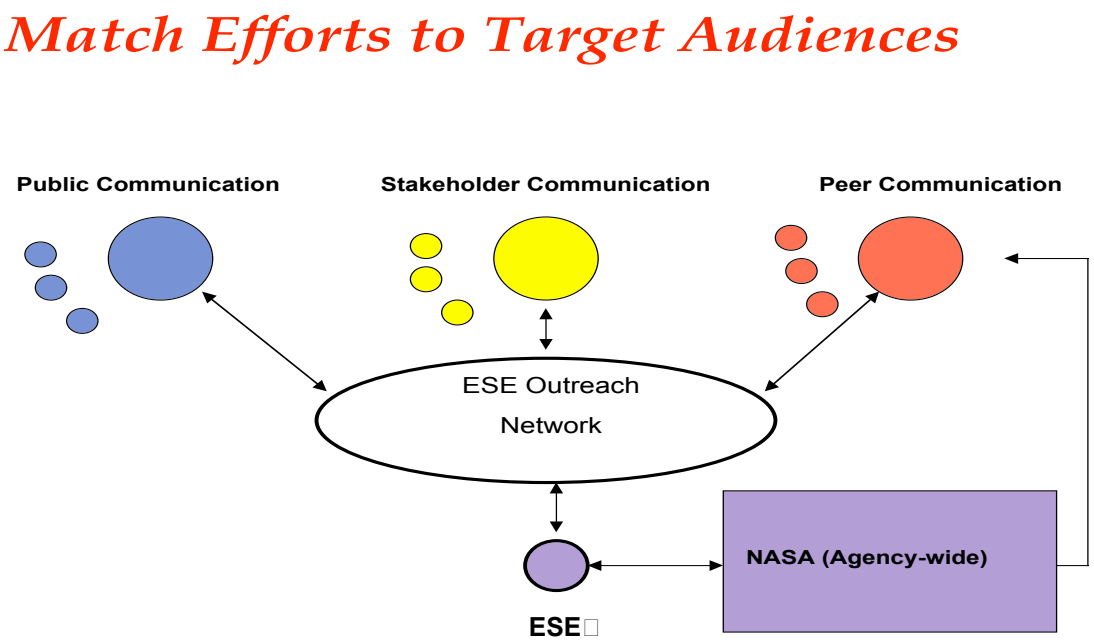

Figure 1-Target audiences for ESE Outreach and communications plan.

ESE Outreach Management System

Interacting with target audiences extends beyond characterization and establishing a message. The first steps in reaching these audiences will require abandoning random decision-making in favor of a more strategically focused, one message effort, that will proactively dialogue with - and respond to - our target audiences. We will develop cognitive and technological bridges to our scientific community, and we will make full advantage of establishing web interfaces and databases for specific audiences. An internal Outreach Portal and database called the ESE Outreach Management System will be created and maintained. The database is a component of a broader Portal developed to provide "in-reach" and cross-coordination for the Earth Science Outreach and communications network. The Portal accesses relevant imagery, visualizations, presentations, and guidelines needed for a robust Outreach and Communications Plan. The Portal's database also interfaces with partnering agencies, interested parties, handles requests with follow up actions, and enables search query capability based on keywords. Ultimately, the Portal will also provide a dynamic and robust mechanism for generating an annual Outreach Report. The Portal, in turn, flows from Presidential Management Agenda guidelines on creation and facilitation of responsive, citizen-centric government. The portal is hosted and maintained by the Enterprise's Chief Information Office.

Management

Given the diverse and diffuse nature of Outreach efforts, a team approach is called for. The Office of Earth Science at Headquarters is responsible for message development and the

overarching coordination of strategy and annual program plans. Key target audiences are "owned" by specific organizations (Congress by Legislative Affairs, Media by Public Affairs). The ESE Research Division holds the ties to the science community, and the ESE Application Division holds ties to federal, state, local, and tribal governments. Formal and informal education responsibilities are managed by the ESE Education Program. Because many outreach efforts can also be considered informal education, the Earth Science Enterprise Outreach team maintains formal and routine interaction with the ESE Education Program and seeks guidance on overlapping issues. The Centers have the most direct connections to the working level science, applications, and engineering communities, local and regional media, the public and to the elected officials in their states. Thus, the Centers are expected to deliver Outreach products.

The Outreach leadership team in the Office of Earth Science at NASA Headquarters is accountable to the Associate Administrator and includes the following:

- Senior Policy Analyst
- Science Communications Manager
- Outreach Program Manager, Applications Division
- Chief Information Officer
- Public Affairs Officer(s), Public Affairs Office
- Legislative Affairs specialist, Legislative Affairs Office

Outreach Council

The Outreach leadership team at the NASA Centers will be comprised of the lead Earth Science Outreach Managers, designated by the NASA Centers and public affairs officers at each NASA Center. Together with the Headquarters members, plus other contributors (e.g., Legislative Affairs, Office of Public Affairs, Division Directors or their designees), these individuals will be members of an Outreach Council. The Council's function will be to contribute to development and implementation of ESE Outreach. The Council will be a 'virtual' council meeting periodically in person, but primarily interacting through a weekly ESE Outreach teleconference. Figure 2 provides a strategic organizational structure for the Enterprise's Outreach Network.

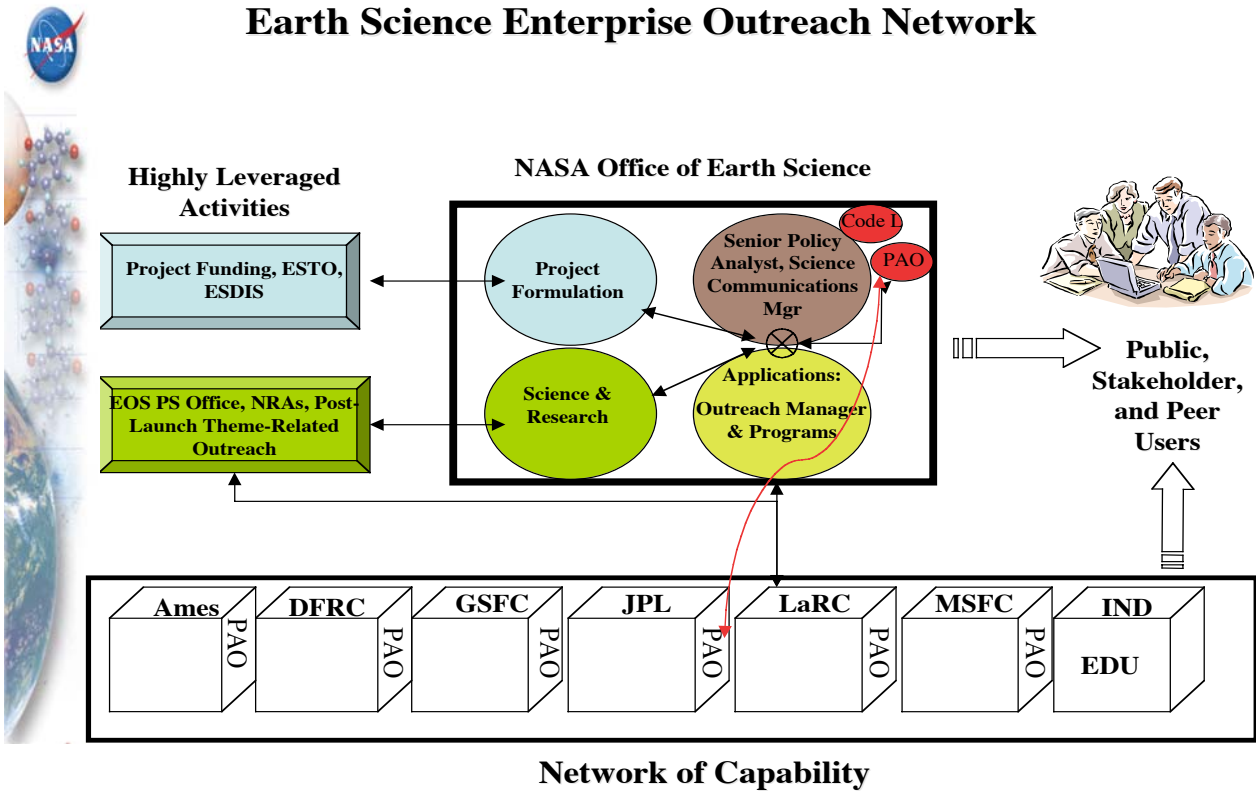

Figure 2-Outreach Network and Centers of Capability

Because the strategy leverages NASA's Earth science leadership with Centers and partner implementation strategies, the structure is more of a network than hierarchy.

Investment Strategy

Investment in Outreach is driven by several considerations.

- Prioritization of target audiences (e.g., decision-makers and opinion shapers);
- Mapping of target audiences to communication pathways and products;
- Measures of cost vs. reach/impact for communication products (includes "scalability" of product or activity);
- Leveraging of formal and informal education resources in product development; and
- Requirements to obtain essential, non-government resources for ESE Outreach efforts.

Investments are of two types, direct and targeted. Direct investments are made from a modest pool of funds at NASA Headquarters. Targeted investments are, from a central perspective, resources expended by programs and projects, such as satellite development programs and science offices, managed at participating Centers, or by other NASA organizations.

Direct Investments

The Office of Earth Science at NASA Headquarters maintains a modest pool of funds, managed by the Enterprise's Outreach Program Manager, who works closely with the Senior Policy Analyst and Science Communications Manager in the setting of priorities for a given funding period. Some funds are allocated to support core activities related to exhibits, posters, displays, and key Outreach functions (e.g. science writers, visualization support). These allocations will be revised on an annual basis.

The plan recognizes the need to provide funds to support opportunities for innovative or effective outreach strategies beyond the realm of core activities. Funds will be available for solicitation by the internal and external NASA community under the Earth Science Outreach Investigator (ESOI) Award. The ESOI awards will be selected through the Enterprise competitive announcements process. Outreach projects will be solicited on an annual basis, pending funding, with the option to renew at 1-year intervals based on yearly evaluations. A peer review committee assembled by the Headquarters' Outreach management team will select the proposals. The goal of this process is to remove the non-competitive and random aspects of the Outreach funding process.

Targeted Investments

Targeted investments are resources expended by programs and projects and are managed by participating Centers or other NASA-affiliated organizations. To provide leadership to the framework, the designated Center Outreach Manager should monitor Outreach activities funded through targeted resources. Projects, missions, and other activities will continue to manage their budgets and activities but should submit an annual Outreach proposal. The proposals must comply with the ESE Outreach and Communications Plan and be approved by the Outreach Council. Products and services are evaluated each year prior to authorization of the next year's investments.

The Center Outreach Manager will be required to produce an annual accounting of the major funded Outreach activities during budget review cycles. Center Outreach Managers should establish working partnerships with all major project and programs engaged in ESE Outreach activities. These activities, along with output from the ESE Outreach Management System will form the core of an annual published ESE Outreach Report, in conjunction with the ESE Education Program. This report will be a comprehensive document for Enterprise and Agency management to measure its annual performance in Outreach and Education.

A selection of innovative, scalable (i.e. broaden in impact, audience, or scope) successful Outreach initiatives from direct and targeted investments may be identified as candidates for supplemental or matching funds, pending budget availability. Selected initiatives will be identified and evaluated by the Outreach Council and the Associate Administrator on a yearly basis.

Management of Direct and Targeted Investments

The ESE Outreach budget for direct investments is assigned to the Earth Science Application Division at Headquarters and is managed by the ESE Outreach Program Manager. Targeted components exist around the Enterprise, and must be coordinated and reviewed to assure that they are addressing Enterprise priorities. A focused attempt will be made to do so, with a first opportunity given to the network of outreach agents to operate in place (with some adjustment) to implement this strategy rather than resorting to a disruptive centralization of capability. Current ESE-outreach activities and successes are summarized in appendix B.

III. Outreach and Communications Implementation Framework

The Earth Science Enterprise has eighty sensors on eighteen satellites delivering over three terabytes of data per day, and there is value in communicating these facts to our target audiences. This section defines and describes various processes required to ensure that a "One NASA" Outreach message is communicated across the Earth Science infrastructure. A Program Plan is described for systematic implementation of a coordinated Outreach strategy. Guidelines for Outreach product development, product review, video production, and printed materials are also provided.

Planning and Metrics

One goal of the Outreach and Communications Plan strives to provide the Earth Science Outreach Network with clear guidance for implementing a coherent Outreach program. Historically, it has been difficult to define measures of success for Outreach activities. For the purposes of this plan, a major metric of success for ESE Outreach efforts will be scalability. Scalability is defined as how effectively can the activity or product be scaled: (1) to different and broad target audiences, (2) to diverse subject matter, or (3) to foreseen and unanticipated needs. Another metric that will be evaluated is sustainability. Initiatives will be evaluated for duration of impact to the intended target audience as well as financial sustainability beyond ESE investment. Additional metrics for ESE Outreach efforts will consider consistency with Agency/Enterprise message, assessment of target audience, and implementation of evaluation strategies.

We have developed a strategic roadmap with short- and long-term goals. The roadmap in figure 3 manifests what the major priorities will be as the program matures. The ESE Outreach Management team at headquarters will periodically evaluate the program against the Approach parameters aforementioned and the roadmap. The roadmap is a dynamic tool and will be periodically updated by gathering feedback from the ESE Outreach network.

An independent review panel will also periodically audit the ESE Outreach program to ensure that it is meeting the goals of the plan and is consistent with Agency and Federal Government strategies. The Outreach Management team coordinates annually with the ESE Education Program to identify areas of overlap, duplication, or inappropriate activities.

Figure 3-ESE Outreach Roadmap

A. Outreach and Communications Program Plan

A key program goal is to implement efficient use of existing resources. In order to properly utilize current and future Outreach resources, the Outreach network members, through the Center or Partner Outreach Manager and Public Affairs Officers (where relevant) will maintain and report the following information on an ongoing basis:

- Identification of Outreach (other than formal education) activities through weekly teleconferences;
- Detailed budget profile of activities at Centers (annually);
- Organization Charts of NASA and support staff involved with Outreach as changes occur;
- Master calendar of events integrated into the Outreach Management System;
- List of visualizations and descriptions from all NASA Visualization Labs (with metadata for databases) (updated monthly to annually)
- Style Guides (maintained by HQ);
- NASA Owned Artwork and logos;
- Inventory of NASA museum programs in conjunction with ESE Education Program;
- Tag Lines, Missions, Visions, Goals (ongoing);
- Conference Coordination Activity (weekly);
- Special Invitations, to Others from NASA, from NASA to others (weekly);
- Media Invitations (as appropriate);
- Earth Science press releases (weekly);
- NASA Web Sites Coordination and Maintenance;
- Coordination of lobby displays (as related to ESE); and
- Recognition of Accomplishments (as they occur)

In an effort to communicate the ongoing activities and status of efforts, a quarterly online newsletter "On Earth" will be published at the http://earth.nasa.gov. An annual Outreach annual report will also be generated for dissemination to Outreach agents, interested stakeholders, and decision-makers (internal and external). Related formal education activities will be managed by ESE Education Program Strategy and subject to its guidelines.

Additionally, we will designate components of the Outreach network as "centers of capability" or COC's. As a baseline designation, the designations will be structured in the following manner although the headquarters management team may periodically re-allocate functions that have a broader or more national scope:

Goddard Space Flight Center

- Visualization Support
  -Rapid-Production Visualizations and Media-Quality Visualization Products

-Science Support and Long-Term Visualization Products
- Specialized Web Interfaces and Data Web Interfaces
- Enterprise Conferences and Publications
- Science Writing and News Mining Operations
- Outreach Activities
- GSFC Public Affairs Partnerships
- Suborbital Platform Displays and Exhibits

Jet Propulsion Laboratory

- Visualization Support
  -Rapid-Production Visualizations and Media-Quality Visualization Products
  -Science Support and Long-Term Visualization Products
- Science Writing and News Mining Operations
- Conferences and Publications
- JPL Public Affairs Partnerships

Langley Research Center

- Science Writing and News Mining Operations
- DEVELOP Program
- Conferences and Publications
- LaRC Public Affairs Partnership

Marshall Space Flight Center

- Science Writing and News Mining Operations
- Conferences and Publications
- MSFC Public Affairs Partnerships

Ames Research Center

- Science Writing and News Mining Operations
- Conferences and Publications
- DEVELOP Program
- ARC Public Affairs Partnerships

Dryden Flight Research Center

- Science Writing and News Mining Operations
- Suborbital Platform Displays and Exhibits
- Conferences and Publications
- DFRC Public Affairs Partnerships

All NASA Centers are still responsible for communicating a coherent and current ESE message and are thereby considered members of the intermediary target group. The lead Earth science Outreach Managers and Public Affairs Officers at the Centers will coordinate all functions. Weekly coordination with the NASA headquarters Outreach team will be implemented.

1. Outreach Plan in conjunction with Earth Science Enterprise Programs

The Earth Science Enterprise is organizing its research program within the context of 6 focus areas:

1. Climate variability and change
2. Atmospheric composition
3. Carbon cycle and ecosystem
4. Water and energy cycle
5. Weather
6. Earth surface and interior

The Enterprise will move away from the model of mission-specific Outreach efforts towards a focus area approach. Each focus area will have a designated Outreach scientist. The role of the focus area Outreach scientist is to coordinate with the Headquarters team, Center Outreach Managers, and the Outreach network to ensure that all Outreach activities and investments related to their focus area are compliant. The array of activities discussed below (e.g. science research, applications, and missions) will be linked with focus areas. Additionally, an Outreach scientist for crosscutting and enabling solutions involving technology will also be required.

Research/Science

All NASA research announcements are encouraged to have an Outreach component. It is anticipated that project and program level activities will allocate appropriate budget resources for Outreach related activities. Appropriate program managers will need to determine how to manage and allocate the budgets appropriately for Outreach and education. Center and Focus Area Outreach leads will work closely with program managers to establish and implement activities. Suggested activities include:

- Sharing research efforts and knowledge directly with policymakers with targeted publications (e.g. Congressional lithographs and 1-page brief sheets, etc.);
- Sharing research efforts and knowledge with the broader university, private sector, and societal communities through relevant publications, press releases, and documents;
- Cross-correlating public engagement contact databases with keywords, tracking conference talks, and asking scientists for names of people, organizations, or laboratories that they would like to have informed of their work;
- Routinely updating the Outreach network by sending emails and/or Web page links with contact information of NASA funded scientists;
- Sponsoring a targeted set of meetings for ESE science community to interact, advise, and plan headquarters staff on future direction, mission development and strategy;
- Maximize exposure of ESE science activities through more frequent (3-4 per year) Science Updates and more media/public-friendly ESE meetings (e.g. EOS Working Group Meeting or its successor should be have a significant media and public interest component);
- Investigators submitting "popular summaries" to Center ESE managers when submitting any refereed journal paper;
- Providing annual summaries of Outreach activities, linkages to the three target group areas (e.g., what groups, numbers impacted, outcomes), and synopses of any products/services eligible for Outreach Product review process;
- Understanding institutional and/or NASA procedures (see below) for submitting potential work for press release or non-science community dissemination; and
- Maximizing the use of sub-orbital and field campaign activities as effective and engaging Outreach opportunities.

National Applications

The National Applications program within the Enterprise has identified twelve areas of priority:

- Agricultural efficiency
- Air quality
- Aviation
- Carbon management
- Coastal management
- Ecological Forecasting
- Disaster management
- Energy Management
- Homeland security
- Invasive species management

- Public health
- Water management

Outreach for the National Applications themes will engage all target audiences and will also focus on the stakeholder and peer groups. National Applications program managers should strive to allocate an appropriate percentage of their budget for Outreach related activities for relevant target audiences. The ESE Outreach Manager will be a valuable partner in integrating these leveraged funds with direct and other funds to implement appropriate Outreach activities. Typical activities in support of the applications plan include the following:

- Establish routine ESE Applications briefings for federal, state, local, and tribal policy makers;
- Support the development of capabilities to enable the science community and media community to better understand the strategies and impacts of the Earth Science applications programs (e.g. workshops, guidebooks, etc.);
- Query operational partner and decision-maker communities to understand what requirements from emerging data system architectures are needed for effective utilization and communication of ESE data;
- Develop enabling infrastructures like (1) an interface that merges browse datasets with GIS overlay and data ordering capability, (2) a graduated suite of software tools for data analysis, and (3) extensible indexed digital repositories of images, animations, and data visualizations for public use (e.g. visibileearth.nasa.gov);
- Develop targeted resources (e.g., posters, storyboards, documents);
- Create collaborative materials with other agencies;
- Provide annual summaries of Outreach activities, linkages to the three target group areas (e.g., what groups, numbers impacted, outcomes), and synopses of any products/services eligible for Outreach Product review process;
- Advance the capabilities of target applications communities with crosscutting solutions, program planning, and new tools like Geo-Spatial One Stop or Earth Knowledge Gateway (EKG);
- Continue to nurture the DEVELOP program as an Outreach mechanism;
- Work with partners to understand and nurture their Outreach efforts; and
- Publish 2 NASA ESE special issues/year in publications like Earth Observation Magazine.

Space Missions

Missions have traditionally played a unique role in the Outreach strategy because these efforts typically merge technology, science, engineering, and applications. Mission projects should allocate an appropriate percentage of its budget towards Outreach with greater than 75% of this budget associated with post-launch science activities. Both Center and focus area Outreach scientists will be important advisors for helping missions to prioritize and coordinate Outreach efforts. Missions should:

- Work closely with the Focus Area Outreach Scientist to develop a coordinated and targeted plan and budget for products and services and to ensure consistency with the

Outreach plan in the pre-launch timeframe, and one that transitions smoothly and seamlessly into the post-launch timeframe.

- Target Outreach products and services, rather than over-utilize "novelty" Outreach mechanisms (e.g., fountain pens, lapel pins, stickers, buttons, etc.).

Cross-Cutting and Enabling

In support of the Outreach plan, cross-cutting activities endeavor to conduct the following Outreach activities that benefit all three targeted audience categories, and in a manner that highlights and strengthens the relationship between science and technology.

- Develop and publish general materials to increase awareness of ESTO, DAACS, their purpose, their goals, and their vision;
- Develop and publish materials that serve to educate general and target audiences about emerging technologies and their strategic linkage to science themes;
- Organize and host conferences, technology workshops and consortia for the Earth Science Enterprise, government institutions, academia and industry; and
- Participate in and support Enterprise technology-related Outreach efforts to foster a unified message and identity.

2. Coordination with Public Affairs

The NASA Public Affairs Office is a critical partner. This asset is an important doorway through which to communicate science, applications, and technologies knowledge to the public. Public Affairs is responsible for issuing press releases, coordinating media events, and various activities. As a component of the Outreach strategy, we will work with Public Affairs to:

- Define reasonable targets of success in communicating with the public;
- Establish a clear and consistent process for sharing Earth science, applications, and technology results to the appropriate outlets (e.g. an end-to-end process from science to press release);
- Establish guidelines for the use of visualizations, fonts, etc. in outreach products that may have broader use;
- Increase the benefits of launches and special events (e.g., launches, field campaigns, etc.) by targeting specific groups or individuals to be invited;
- Create VIP packets and other readily available informational packets that can be easily modified for the particular audience; and
- Participate in regular meetings at NASA headquarters and field centers;

In conjunction with the NASA Public Affairs office, an Earth Science Enterprise Editorial Board (ESEEB) will be established to more effectively and fairly evaluate Earth Science Update (ESU) proposals and select the best topics for production. The ESEEB differs from the Outreach Council in its scope and make-up. The Editorial Board will be convened when a Program Scientist or Science Board member, who has received and reviewed a proposal, deems it to be a

worthy candidate for an ESU topic. The following outline will govern how the Editorial Board is organized and will function:

1. Criteria for Consideration: Top level science results with significant NASA sponsorship AND potential to make "front-page news

    - Significant, not incremental, advancement in the area of science
      -Independent peer-review preferred; alternatives must be approved by Editorial Board.
    - News value must be high:
      - "First", "largest" "most important" etc. or other similar news hook.
      - Excellent visuals, including animation(s).
      - High public interest in the topic.
    - Resources identified to produce materials, including television graphics, press kit, images, animations, web site posting, etc. as needed.

2. Editorial Board Membership:

    - Associate Administrator or Designee
    - Senior Policy Analyst
    - "Non-advocate" Science Board of Director member (selected by AA)
    - Science Communications Manager
    - Outreach Manager
    - Enterprise advocate/sponsor of ESU proposal

3. Procedures:

    - "Advocate" (Program Scientist and/or Science Board Director) notifies Code Y PAO of ESU proposal.
    - Code Y PAO calls for Editorial Board meeting and schedules at earliest convenience.
    - Editorial Board meeting maximum length 30 minutes:
    - Code Y advocate/sponsor of ESU proposal has 10 minutes to brief the idea to include:
        -what the news is?
        -what the science is?
        -who would likely be on the panel?
        -what the graphics would be?
        -other interesting information?
        -schedule and resources?
    - Editorial Board question and discussion (15 minutes).
    - Editorial Board decision. If approved, a planning date and timetable for production of the ESU will be set. If not approved, an alternate means of release should be considered, such as press release, video file, web posting, etc.

3. Coordination with Education Programs

There is a natural and inherent link between education and outreach. While both of these elements have unique program plans, education and outreach are mutually supportive towards achievement of Agency goals, objectives and outcomes. Education is concerned with what is being delivered, how it is being delivered and the specific learning that takes place. Outreach is concerned with informing targeted audiences not only what the Agency is accomplishing and learning, but also why we are doing so and how it is relevant to them. Outreach audiences are grouped into three broad categories: Public Communication, Stakeholder Communication, and Peer Communication. At the Agency level, Goal 7, *Engage the public in shaping and sharing the experience of exploration and discovery,* has education and outreach components. Table 2 illustrates Earth Science Education and Earth Science Outreach contributions to the Agency goal.

Table 2. Earth Science Education and Earth Science Outreach Contributions to Agency Goal 7

NASA Strategic Goals and Objectives	Earth Science Education	Earth Science Outreach
Goal 7. -- Engage the public in shaping and sharing the experience of exploration and discovery		
Objective 7.1 --Improve the capacity of science centers, museums, and other institutions, through the development of partnerships, to translate and deliver engaging NASA content.	✓	
Objective 7.2 --Improve science Literacy by engaging the public in NASA missions and discoveries, and their benefits, through such avenues as public programming, community outreach, mass media, and the Internet.	✓	✓
Objective 7.3 --Increase public awareness and understanding of how research and innovations in aerospace technology affect and improve the quality of life.		✓

The Earth Science Enterprise Outreach plan will exist in parallel with the ESE Education Program, *Inspire the Next Generation of Earth Explorers*. The ESE Education program has established a set of guidelines for formal and informal education activities. These activities are beyond the scope of the Earth Science Enterprise Outreach and Communication plan. However, the Enterprise's Outreach team will:

- Participate in cross-cutting activities;
- Share products, where appropriate;
- Combine events, where appropriate;
- Utilize the digital library efforts such as the Digital Library for Earth System Education in partnership;

- Review Fellowship research for possible Outreach opportunities;
- Share multimedia resources;
- Share knowledge gained from education conferences and earth science related conferences regarding successful and popular informational material;
- Share some of Informal Education activities based on discussions and appropriate actions (such as museums, science centers, nature centers, community events); and
- Share metrics to evaluate effectiveness.

4. Coordination with Legislative Affairs

Stakeholders are a key target audience identified in this plan. The Enterprise will leverage the expertise and procedures of the Legislative Affairs Office to communicate key information to Congressional policymakers and staff. The Legislative Affairs Office liaison is considered to be a key partner in the ESE Outreach and Communications paradigm.

5. Conferences

Conferences and meetings are important forums for sharing information and interacting with target audiences, particularly peer and stakeholder groups. The Outreach Plan promotes a new paradigm for presenting the ESE at conferences and meetings. To maximize the effectiveness of conferences and meetings, the plan seeks to:

- Implement and maintain an on-line events management system within the Outreach Management System;
- Identify and target key meetings at which we might reach a maximum number or strategic set of target audience groups;
- Implement a process in which Outreach network agents inform Outreach Managers of plans and budget requirements for exhibiting conferences or workshops prior to any expenditures or agreements;
- Establish guidelines and training resources for ESE agents for proper protocol in representing the Enterprise and Agency at booths and conference activities;
- List all planned attendance and level of participation to events;
- Examine cost/benefit of having a booth by attendance, audience, locations, etc. Present plans and reasons for those plans during the Outreach weekly teleconference;
- Coordinate ONE NASA ESE booth when deemed appropriate; and
- Collect business cards from booth attendees that interacted with the staff and follow-up with a call or email to see how beneficial there visit was and to see if they are using the informational material.

6. Outreach Network Communications

Internal communication within the Outreach network is vital. Several mechanisms will be utilized to achieve an effective level of network "inreach." Weekly teleconference meetings with the network will be used to provide a routine synopsis of ongoing and future Outreach activities. Additionally, the ESE Outreach Management System portal and database will be created and maintained. The database will be a component of a broader portal developed to provide "in-

reach" and cross-coordination for the Outreach and communications network. In addition to the database, the Portal would access relevant images, visualizations, presentations, and guidelines needed for a robust Outreach and communications strategy. Visible Earth (http://visibleearth.nasa.gov) is an Enterprise-level site where many of NASA's "for public release" Earth images, animations and data visualizations are being archived. The Portal's database will also interface with partnering agencies, interested parties, requests with follow up actions, and search query capability based on keywords. The procedure for database and list management is to create, maintain, and use a contacts database for intermediary (peer), stakeholder, and informal education contact information. Keywords will be assigned to each contact to determine related topics of interest. This can also be used for mailings and workshop invitations, and notification of funding opportunities. The Portal will also serve as a gateway and scheduler for regular and sustained communication within the network. Finally, the Portal would also provide a dynamic and robust mechanism for generating the Education and Outreach Annual Report. The Annual Report will be a powerful resource for Enterprise management, staff, and Outreach agents to utilize for promotion and assessment of Outreach activities.

7. Cross-Enterprise Collaborations

The Enterprise currently partners with all other NASA Enterprises in Outreach-supporting endeavors. At the agency level, the most comprehensive collaboration is on the NASA Portal Editorial Board. Other notable examples include co-hosting of resources with the Office of Aerospace Technology (OAT), collaborative XML research efforts with the Office of Biological and Physical Research (OBPR), re-use of the Office of Space Science (OSS) Education/Public Outreach system and shared use of Congressional Database with all other Enterprises.

8. Coordination with External Affairs

The Enterprise's Outreach network will work to support current and future linkages to international programs and partnerships like the Committee on Earth Observation Satellites (CEOS) and the International Working Group on Earth Observations (IWGEO). Additionally, efforts will be determined on a case-by-case basis depending on direction from the Administrator's office or Associate Administrator's office. These efforts will be coordinated with the NASA External Affairs Office.

B. Outreach Product Development & Review Process

The network is composed of numerous partners and institutions yet a "One NASA" consistency in quality, accuracy, and content is encouraged, when possible. In general, the following process should be followed before new products or services are proposed.

Determine:

- Audience
- Distribution Mechanism
- Cost (staff time, printing, mailing, etc.)
- Evaluation criteria

- For documents that serve to replace previous ones, evaluate the cost/benefit of replacement
- Experience and evaluation from Predecessor
- Changes and change mechanism

Such assessment is necessary to ensure a high level of confidence in the implementation strategy. The Outreach implementation framework provides two distinct product and services review processes (see Appendix C).

Rapid Development Approval:

The first process is a shorter and less involved process than the Educational Review Process. This process is intended for Outreach materials that require a rapid development and approval process. The process involves submitting an idea (and draft if available) to the Outreach Manager. The Outreach Manager will route the product for a rapid approval process through the appropriate signatures designated in the Outreach Product Approval Form (Appendix D).

Standard Product/Services Approval:

The Outreach Council will establish criteria for what products require formal product approval. This may include a product cost threshold and consideration of the uses to which the product will be put. This process is modeled on the current ESE Educational Product Review. In this process, the product or service is routed to the Outreach Manager from the proposing individual or organization. The Outreach Manager assembles an Outreach Review Team, composed of scientists, Outreach professionals, and educators that will evaluate and approve products for limited, targeted, or broad distribution.

The three-part process for approval includes:

- First, a one-page description should be provided to the Outreach Council that names the product, its intended audience, distribution plan / mechanisms (Appendix D);
- Second, the product should be subjected in draft form to the Outreach Review Process to assure readability, utility, or other programmatic issues; and
- Third, the designated officials in HQ should concur on them. The Outreach Product Authorization form will then be re-routed for final sign-off and approval.

Appendix A: Rationale for “One NASA”

Rationale

NASA is viewed as one of the preeminent organizations devoted to exploration in the country today. That reputation has been achieved as a result of 45 years of unprecedented success. The One NASA effort is no different than any continuous improvement effort within industry today where we continually strive to improve upon our past by looking toward the future. Further, the One NASA initiative is in keeping with the President's Management Agenda, the goal of which is to make the Government more efficient and effective.

Background

In the Apollo era, NASA had one unifying goal so large and relevant that it was embraced by the public and resulted in the placement of a man on the moon. The innovation that was at the heart of the Apollo era still burns within the NASA of today. However, the world has changed such that society is perhaps more interested in the value we add to life on Earth, even while we explore the outer bounds of the universe. Our current vision and mission statement accurately reflect that shift in public sentiment by encompassing a broader range of objectives. With that shift in culture, and a broader mission and vision, comes the challenge of ever strengthening a workforce that is absolutely committed to excellence under a mission and vision that requires us to address multiple objectives. The intent of One NASA is to build on the capabilities that are unique and "value added" from each Center, for the good of the whole, while working under that common shared vision. NASA is addressing the needs of today while building the capability that will allow us to pursue any destination tomorrow. One NASA is about our team "building the future…together."

Simply Stated

The concept of One NASA simply means that we will operate as one team that applies our many unique capabilities to the pursuit of a shared vision and in keeping with our clearly defined mission statement. One NASA specifically addresses our challenge of doing the things "as only NASA can." NASA is pursuing those challenges that are outside the realm of possibility within the commercial sector. The One NASA initiative will enable NASA to better fulfill that mission and vision by 1) fostering more collaboration across the Agency, and 2) promoting more efficient systems and processes throughout the Agency. One NASA then consists of ten Centers and a Headquarters function working together under a shared vision that clearly defines the roles of and interrelationship between the different Enterprises as we pursue those significant challenges. One NASA enables the Agency to accomplish those things that no one organizational element can possibly achieve on their own.

Appendix B: Current Outreach Activities and Success Stories from Previous Outreach/Education Activities

Current Outreach Activities

- The ESE main web site, www.earth.nasa.gov, is designed and maintained by a collaborative assembly from all elements of the Enterprise. Contributory partners include scientists, engineers, web developers, educator and program executives from across the Enterprise. The site has garnered dozens of industry and science peer awards, and remains the primary means of reaching the greatest segment of the public and community of practice. With more than 3.5 million hits a month and over 3000 discreet pages, it is the Agency's largest Enterprise site. Major components include "Society Benefits", "Earth Observatory", "For Kids Only!" and perspectives on Mission, Research and Technology for the public.
- The EOS Project Science Office at GSFC undertakes considerable efforts in outreach, primarily to the science community. Their activities include managing conference booths, publications, and graphics development.
- JPL's Public Engagement program reaches data users, media, policymakers, and the public through partnerships with Earth and Sky Radio, Earth on Wheels, Earth Science Advisors, advanced visualization capabilities, and story mining.
- The Education program comprises both formal and informal components; the latter generates products with content and form useful in Outreach as defined here.
- The Office of Public Affairs (PAO) is NASA's outlet to the news media, and also manages Agency displays and the NASA home page. PAO officers are co-located in the Office of Earth Science and in ESE-related field centers around the nation. This office manages NASA TV, and is working on an Agency-wide move to digital TV. The Office of Public Affairs' new management has an interest in Outreach that extends beyond the news media.
- The Office of Legislative Affairs is the Agency's liaison to Congress.
- The News Mining operations at GSFC and JPL generate science stories for the media as an Enterprise augmentation to the Office of Public Affairs' capability.
- The Earth Science Technology Office invests in ESE outreach to the public and has contract mechanisms that it applies for outreach products.
- The various programs and projects at the Centers overseen by the ESE Program Planning & Development Division each invest in outreach in the form of videos, brochures, posters and premium tokens; some of these undergo rigorous review (such as the Education Product Review) but others do not.
- The various post-launch science mission outreach programs provide outreach materials, websites, and stories.
- The visualization resources at various centers provide unique images and animations for use by Pubic Affairs, scientists, and others.
- The industrial contractor community has offered to help, and we need to find ways to engage them in a manner in keeping with government regulations and Agency guidelines.
- Suborbital missions and field campaign activity give target audiences hands-on exposure to the sensors and platforms, plus quick-look data that can be immediately linked to local events. DC-8, ER-2, and P3 Airborne Laboratories, and new UAV systems also serve as

ESE Ambassadors. NASA also works closely with other agencies (EPA, USGS, NPS, NOAA, NSF, etc.) to develop their operational suborbital monitoring as well as science capabilities.

A Sample of Success Stories from Previous Outreach/Education Activities

To date, the public's investment in the ESE's Outreach efforts has produced valuable products and services for NASA, the nation, and the international community. As the ESE sets forth a cohesive plan to proceed in the future, it is useful to review some of the ESE Outreach program's current success stories:

a. NASA continues to support the Odyssey of the Mind effort. The Odyssey of the Mind program, founded in 1978, is an international creative problem-solving competition for students from kindergarten through college. Participants come from almost every U.S. state and about 25 other countries. The partnership of Odyssey and NASA is a natural collaboration, with both organizations representing the best of the best in innovation, teamwork and creative problem solving. NASA expects to reach nearly two million students, parents, teachers and coaches around the world through its sponsorship of Odyssey of the Mind, stimulating interest and learning about Earth system science among all age groups.

b. "Earth Observatory" represents the news and features section of Destination Earth, the ESE website. Its awards include 2003 Webby Award and 2003 People's Voice Award for Education, the 2002 People's Voice Award for Science, the 2002 *Scientific American* "Top 50 Best Science and Technology Web Sites," the 2001 NASA Group Achievement Award, and the 1999 *Popular Science* "Top 50 Best Science and Technology Web Site." The web site receives an average of 37,000 page views a day. The largest segment of its readership is the "science attentive public."

c. "For Kids Only!" is one of the Agency's most-lauded sites, receiving more than 1.5 million hits a month. An interactive, graphically appealing informal education site, it has won over 40 major awards from *Scientific American, Popular Science, PBS, Smithsonian, National Geographic,* the NSTA, NEA, and twice named Educational Site of the Month," by the White House.

    a. Echo the Bat, ESE Education Program's most successful outreach effort for younger students, teaches younger students about remote sensing. Echo was recently named the official mascot of several National Parks.

d. "40+ Years of Earth Science" remains one of the most popular sections of Destination Earth; it is also the only on-line information source for mission continuity. Here the public can see that ESE's programs span 5 decades, and that our current successes are built on the work of those who have gone before.

e. Partnerships with Earth & Sky radio, National Air and Space Museum (Earth Today), PBS ("Journey to Planet Earth Series), and numerous others.

f. The E-Theatre was developed at Goddard Space Flight Center to seamlessly blend large Earth Science datasets into a presentation package that the public can understand and enjoy. From 1998-2003, over 5 million people have gained a better understanding of ESE science and applications through the E-theatre presentations or E-theatre visualization used in the media (e.g. 2002 Winter Olympics).

g. ESE science and applications results are seen by millions of people on an annual basis through the proliferation of lithographs, posters, and booklets as well as through informal education mechanisms like the Earth Today exhibit at the Smithsonian's National Air and Space Museum.

h. Since 2001, NASA has issued approximately 200 press releases on ESE-related activities. Such press releases often translate into broader media exposure for the Enterprise.

i. The MODIS Rapid-Fire system (http://rapidfire.sci.gsfc.nas.gov/production) has been developed for near-real-time data access and is frequently accessed by our stakeholder community (e.g., U.S. Forest Service, National Park Service, etc.). It could serve as a prototype for other data products like floods or pollution concentrations.

j. The Enterprise has worked closely with Earth Observation Magazine to publish two issues dedicated solely to applications and modeling efforts within the ESE. Two special issues per year on ESE related topics are planned. This magazine is a significant communications conduit into the community of potential users of ESE data, including GIS specialists, planners, and decision-makers.

k. Twelve National Applications posters, "Science Serving Society" booklet and an Earth Observation Mission booklet have been generated to explain the coordinated efforts to benchmark the transition ESE measurements and knowledge to societal users through decision support systems.

l. Hosting successful ESE exhibits at the World Bank and Centennial of Flight Exhibits.

m. Conducted a successful Earth Science Update on Fires in the Earth System.

Appendix C. Guidelines for video and printed material for Earth Science Enterprise (not NASA Educational material):

- All printed materials should bear the NASA logo and the name "Earth Science Enterprise" and the Enterprise's web address.
    - Specific cases of regional or political reasons for using Center names will be evaluated and approved on a case-by-case basis
- All ESE materials will employ, at a minimum, the NASA tag-line "to understand and protect our home planet" but preferably, the entire mission statement.
- Acronyms and agency jargon will be eliminated or severely limited in any written communication intended for external distribution. If acronyms exist, the first case will be defined. Agency jargon will be translated into common English usage.
- An efficient and effective use of resources should be considered when planning to develop new materials for Outreach or participating in events.
    - Sharing of printing and publishing costs being incurred, if any, should be considered if material will be used for cross-cutting purposes.
    - An awareness of existing plans for events or plans for creating new products and material within NASA should be researched prior to commitment of funds.
    - Posters, brochures, lithographs, and CDs should be science-oriented first, and address specific missions in this context. See Outreach Review Process.
- The Office of Earth Science at Headquarters must approve concepts and scripts for all video productions prior to production. Concepts include identification of target audiences and distribution plans. Video products (e.g. scripts, storyboards, and finished production) should follow the Outreach product review process previously outlined in section B.
- Pins, and other premium tokens should not be developed until the subject programs and projects have been officially named.
- All websites should prominently include a link to earth.nasa.gov

Appendix D-Outreach Product Approval Form

National Aeronautics and Space Administration

NASA Earth Science Outreach Products Authorization

Use this form to approve all NASA/ESE Outreach Products

☐ Concept Approval Final Product Approval

Title	Author(s)/Originator(s)	
Date Assigned	Date Due	
Originating NASA Organization (Include organization code)	Performing organization (if different)	
Contract/Grant/Interagency/Project Number(s)/SWR Number	Document File Name	Document File Date
Check: ☐ Conference Material ☐ Periodical ☐ Video ☐ Poster ☐ Handout/Flyer/Brochure ☐ Booklet	Intended Audience: Public Government Academia Industry/Scientific Other	
Review Dates: Draft 1 _____ Draft 2 _____ Draft 3 _____ Final _____	Additional Information/Comments:	

Final Approval

_____
ESE Senior Management

_____
ESE Senior Policy Analyst

_____
ESE Outreach Manager

_____
ESE Science Communications Manager

_____
NASA Public Affairs Representative, (where relevant)